

Some cells capture light energy.

The source of energy for almost all organisms ultimately comes from sunlight. Plants change the energy in sunlight into a form of energy their cells can use—the chemical energy in glucose. All animals benefit from the ability of plants to convert sunlight to food energy. Animals either eat plants, or they eat other animals that have eaten plants.

Photosynthesis (FOH-toh-SIHN-thih-sihs) is the process that plant cells use to change the energy from sunlight into chemical energy. Photosynthesis takes place in plant cells that have chloroplasts. Chloroplasts contain **chlorophyll** (KLAWR-uh-fihl), a light-absorbing pigment, or colored substance, that traps the energy in sunlight.

The process of photosynthesis involves a series of chemical steps, or reactions. The illustration on the next page shows an overview of how photosynthesis changes starting materials into new products.

READING TIP

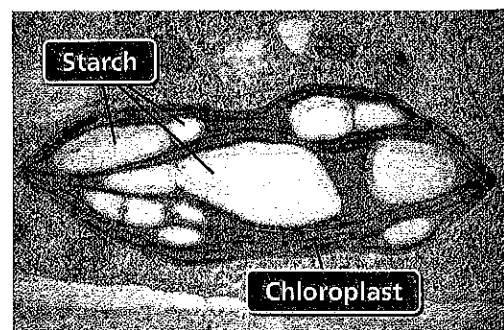
As you read each numbered item here, find the number on the diagram on page 49.

- 1 **The starting materials** of photosynthesis are carbon dioxide and water. The plant takes in carbon dioxide from the air and water from the soil.
- 2 **The process** takes place when carbon dioxide and water enter the plant's chloroplasts. Chlorophyll captures energy from sunlight, which is used to change carbon dioxide and water into new products.
- 3 **The products** of photosynthesis are oxygen and sugars such as glucose. The plant releases most of the oxygen to the air as a waste product and keeps the glucose for its energy needs.

CHECK YOUR READING

Summarize photosynthesis. Remember that a summary includes only the most important information.

Plants do not immediately use all of the glucose they make. Some of the glucose molecules are linked together to build large carbohydrates called starch. Plants can store starch and later break it back down into glucose or other sugars when they need energy. Sugars and starches supply food for animals that eat plants.



The starch in this plant cell stores energy.